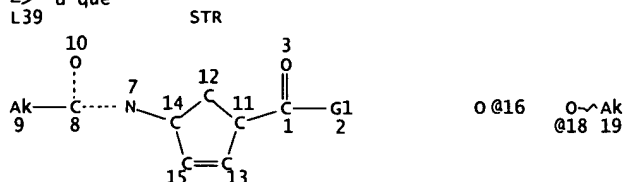


=> d que  
L39



VAR G1=16/18  
NODE ATTRIBUTES:  
CONNECT IS E1 RC AT 9  
CONNECT IS E1 RC AT 16  
CONNECT IS E1 RC AT 19  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE  
L41 14 SEA FILE=REGISTRY SSS FUL L39  
L42 5 SEA FILE=REGISTRY ABB=ON PLU=ON L41 AND "15"  
L43 10 SEA FILE=CAPLUS ABB=ON PLU=ON L42

=> d bib ab hitstr 1-10

L43 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:426567 CAPLUS  
DN 142:482029  
TI Preparation of [(1R,3S)-3-isopropyl-3-[[3-(trifluoromethyl)-7,8-dihydro-1,6-naphthyridin-6(5H)-yl]carbonyl]cyclopentyl][(3S,4S)-3-methoxytetrahydro-2H-pyran-4-yl]amine salt as chemokine receptor CCR-2 antagonist  
IN Cai, Dongwei; Fleitz, Fred; Ge, Min; Hoerrner, Scott; Javadi, Gary; Jensen, Mark; Larsen, Robert; Li, Wenjie; Nelson, Dorian; Szumigala, Elizabeth; Yang, Lihu; Zhou, Changyou  
PA Merck & Co., Inc., USA  
SO PCT Int. Appl., 33 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

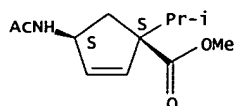
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005044795	A1	20050519	WO 2004-US35294	20041025
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, GU, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI US 2003-514754P P 20031027  
OS CASREACT 142:482029; MARPAT 142:482029  
AB The present invention provides an efficient synthesis for the preparation of [(1R,3S)-3-isopropyl-3-[[3-(trifluoromethyl)-7,8-dihydro-1,6-naphthyridin-6(5H)-yl]carbonyl]cyclopentyl][(3S,4S)-3-methoxytetrahydro-2H-pyran-4-yl]amine (I) and its succinate salt. The present invention addnl. provides an efficient syntheses for the preparation of intermediates, i.e. (3R)-3-methoxytetrahydro-4H-pyran-4-one (II), (1S,4S)-4-(2,5-dimethyl-1H-pyrrol-1-yl)-1-isopropylcyclopent-2-ene-1-carboxylic acid (III), and 3-(trifluoromethyl)-5,6,7,8-tetrahydro-1,6-naphthyridine (IV), and for the preparation of the precursor (3S,4S)-N-((1S,4S)-4-isopropyl-4-[[3-(trifluoromethyl)-7,8-dihydro-1,6-naphthyridin-6(5H)-yl]carbonyl]cyclopent-2-en-1-yl)-3-methoxytetrahydro-2H-pyran-4-amine (V). The invention addnl. resides in the superior properties of the I succinate. Thus, 730 g III was treated with 228 mL methanesulfonyl chloride in the presence of 0.93 L diisopropylethylamine in 6.6 L THF at 0-13°, stirred at room temperature for 4 h, cooled to .apprx.15°, treated with IV.HCl, warmed to 23°, treated with 0.93 L diisopropylethylamine with cooling at .apprx.25° over 15 min, and aged for .apprx.1 h to give 1.055 kg the compound (VI). VI (1.055 kg) in MeOH was added to 1 kg hydroxylamine hydrochloride, 50% aqueous hydroxylamine (1 L), and 5 L H2O, and the resulting slurry was refluxed at 71° for 6 h to give, after treatment with anhydrous HCl in isopropanol, the amine dihydrochloride (VII) (0.76 kg). VII (777 g) was slurried in 3 L iso-Pr acetate and the mixture was cooled in an ice bath, successively treated with 860 mL n-Bu3N, 260 mL isopropanol, and sodium triacetoxymethylborohydride (724 g, at 5°), and after 1 h, treated with a solution of II in iso-Pr acetate (1.76 L of a 160 g/L solution), and allowed to react for 6 h to give 654 g crude V (90%). V (640 g) was diluted with 6.4 L MeOH, charged to an autoclave, treated with a slurry of 256 g

5% Pd-C in 5.0 L MeOH, and hydrogenated under H pressure of 40 psi at 25° overnight to give a solution of 633 g I in MeOH (98.5%) which was concentrated to an oil (770 g). The oil was dissolved in 3.1 L iso-Pr acetate and the solution was concentrated to a brown oil. Dilution with iso-Pr acetate and concentration was repeated two addnl. times. The resulting oil was converted into I benzenesulfonate (1.645 kg) by treating with 283 g benzenesulfonic acid in iso-Pr acetate and treatment with heptane and the resulting benzenesulfonate salt was treated with a mixture of K<sub>2</sub>CO<sub>3</sub>, H<sub>2</sub>O, and iso-Pr acetate to give an oil containing 1.16 kg I. The latter oil was treated with 294 g succinic acid in ethanol and heptane to give 1.328 kg I succinate.

IT 851956-93-9P, Methyl (1S,4S)-4-(acetylamino)-1-isopropylcyclopent-2-ene-1-carboxylate  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of [(1R,3S)-3-isopropyl-3-[[3-(trifluoromethyl)-7,8-dihydro-1,6-naphthyridin-6(5H)-yl]carbonyl]cyclopentyl][(3S,4S)-3-methoxytetrahydro-2H-pyran-4-yl]amine salt as chemokine receptor CCR-2 antagonist)  
 RN 851956-93-9 CAPLUS  
 CN 2-Cyclopentene-1-carboxylic acid, 4-(acetylamino)-1-(1-methylethyl)-, methyl ester, (1S,4S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:53929 CAPLUS

DN 132:107046

TI Preparation of optically active azabicycloheptenone derivatives by stereospecific enzymic hydrolysis

IN Bernegger-Egli, Christine; Brux, Frank; Roduit, Jean Paul; Werbitzky, Oleg; Guggisberg, Yves

PA Lonza A.-G., Switz.

SO PCT Int. Appl., 27 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

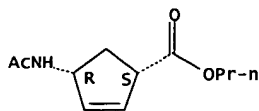
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000003032	A1	20000120	WO 1999-EP4814	19990708
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9952803	A1	20000201	AU 1999-52803	19990708
EP 1095160	A1	20010502	EP 1999-938217	19990708
EP 1095160	B1	20040128		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002520027	T2	20020709	JP 2000-559252	19990708
AT 258605	E	20040215	AT 1999-938217	19990708
PT 1095160	T	20040630	PT 1999-938217	19990708
ES 2214876	T3	20040916	ES 1999-938217	19990708
NO 2001000121	A	20010108	NO 2001-121	20010108
US 6780634	B1	20040824	US 2001-743391	20010417
US 2004167351	A1	20040826	US 2004-779339	20040213
PRAI EP 1998-112719	A	19980709		
EP 1998-123949	A	19981217		
WO 1999-EP4814	W	19990708		
US 2001-743391	A3	20010417		
MARPAT 132:107046				

OS The invention relates to a biotechnol. method for producing optically active compds. of general formulas (I) and (II), wherein R<sub>1</sub> represents acyl or acyloxy, and R<sub>2</sub> represents H or C<sub>1</sub>-C<sub>10</sub> alkyl, by reaction of the racemic lactam using a hydrolase in the presence of a nucleophile and in the presence of a base in a constant pH range. The invention also relates to the subsequent conversion of compound I into the optically active 1-amino-4-(hydroxymethyl)-2-cyclopentene of formula (III). Racemic 2-acetyl-2-azabicyclo[2.2.1]hept-5-en-3-one 419.25 mL was diluted with water 60 mL and a com. subtilisin solution 31.5 mL. This solution was brought to pH 7.5 and incubated at 30° with vigorous stirring. After 45 h (1R,4S)-2-Acetyl-2-azabicyclo[2.2.1]hept-5-en-3-one with an ee 99% was obtained. Final yield of purified product was 31%.

IT 255839-19-1P  
 RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)  
 (preparation of optically active azabicycloheptenone derivs. by stereospecific enzymic hydrolysis)

RN 255839-19-1 CAPLUS  
CN 2-Cyclopentene-1-carboxylic acid, 4-(acetlamino)-, propyl ester, (1S,4R)-  
(9CI) (CA INDEX NAME)

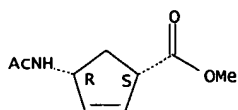
Absolute stereochemistry.



RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1997:480168 CAPLUS  
DN 127:176646  
TI An approach to a carbocyclic analog of cyclic adenosine 5'-diphosphate  
ribose. The synthesis and bisphosphorylation of N1-[(1S,3R)-3-  
(hydroxymethyl)cyclopent-1-yl]inosine  
AU Fortt, Simon M.; Potter, Barry V. L.  
CS Dep. Medicinal Chem., School Pharmacy and Pharmacology, Univ. Bath, Bath,  
BA2 7AY, UK  
SO Tetrahedron Letters (1997), 38(30), 5371-5374  
CODEN: TELEAY; ISSN: 0040-4039  
PB Elsevier  
DT Journal  
LA English  
AB The synthesis of N1-[(1S, 3R)-3-(hydroxymethyl)cyclopent-1-yl]inosine via  
a cyclocondensation route is reported. Regioselective bisphosphorylation  
of the primary 5'-hydroxyl groups leads to a carbocyclic, inosine analog  
of seco ADP ribose.  
IT 127061-46-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and bisphosphorylation of hydroxymethylcyclopentylinosine)  
RN 127061-46-5 CAPLUS  
CN 2-Cyclopentene-1-carboxylic acid, 4-(acetlamino)-, methyl ester,  
(1S-cis)- (9CI) (CA INDEX NAME)

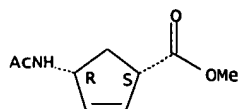
Absolute stereochemistry.



RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

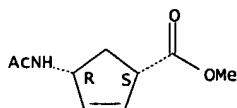
L43 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1996:569065 CAPLUS  
DN 125:300485  
TI Lipase-catalyzed resolution of 2-azabicyclo[2.2.1]hept-5-en-3-ones  
AU Nakano, Hiroto; Iwasa, Kazuto; Okuyama, Yuko; Hongo, Hiroshi  
CS Tohoku College Pharmacy, Sendai, 981, Japan  
SO Tetrahedron: Asymmetry (1996), 7(8), 2381-2386  
CODEN: TASYE3; ISSN: 0957-4166  
PB Elsevier  
DT Journal  
LA English  
AB The lipase-catalyzed asym. resolution of 2-azabicyclo[2.2.1]hept-5-en-3-ones  
was reported. Non-racemic chiral 2-azabicyclo[2.2.1]hept-5-en-3-ones were  
obtained conveniently by lipase-catalyzed enantioselective  
transesterification or hydrolysis of 2-(hydroxymethyl)-2-  
azabicyclo[2.2.1]hept-5-en-3-one or 2-[(acetyloxy)methyl]-2-  
azabicyclo[2.2.1]hept-5-en-3-one. The resolution of (+)-2-(hydroxymethyl)-  
2-azabicyclo[2.2.1]hept-5-en-3-one (I) gave (1R)-2-[(acetyloxy)methyl]-2-  
azabicyclo[2.2.1]hept-5-en-3-one which was hydrolyzed to give  
(1R)-2-(hydroxymethyl)-2-azabicyclo[2.2.1]hept-5-en-3-one. Ring opening  
of the latter gave (-)-(1S-cis)-4-(acetlamino)-2-cyclopentene-1-  
carboxylic acid Me ester (II) which is an intermediate for carbovir.  
IT 127061-46-5P, (1S-cis)-4-(Acetlamino)-2-cyclopentene-1-carboxylic  
acid methyl ester  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(lipase-catalyzed resolution of 2-azabicyclo[2.2.1]hept-5-en-3-ones)  
RN 127061-46-5 CAPLUS  
CN 2-Cyclopentene-1-carboxylic acid, 4-(acetlamino)-, methyl ester,  
(1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



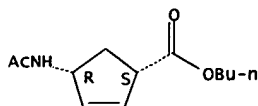
L43 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1996:175342 CAPLUS  
 DN 124:254209  
 TI Substrate specificity of glycine ribonucleotide transformylase from chicken liver  
 AU Antle, Vincent D.; Liu, Dashan; McKellar, B. Robert; Caperelli, Carol A.; Hua, Mei; Vince, Robert  
 CS Division Pharmaceutical Sciences, University Cincinnati Medical Center, Cincinnati, OH, 45267-0004, USA  
 SO Journal of Biological Chemistry (1996), 271(11), 6045-9  
 CODEN: JBCHA3; ISSN: 0021-9258  
 PB American Society for Biochemistry and Molecular Biology  
 DT Journal  
 LA English  
 AB Several glycine ribonucleotide analogs have been prepared and evaluated as substrates and/or inhibitors of glycine ribonucleotide transformylase from chicken liver. The side chain modified analogs, in which the glycine side chain, R = CH<sub>2</sub>NH<sub>2</sub>, has been replaced by R = CH<sub>2</sub>NHCH<sub>3</sub> and R = CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, are substrates, with V/K (relative intensity) of 2.4% and 16.3%, resp. Several carbocyclic analogs of glycine ribonucleotide, including the phosphonate derivative of carbocyclic glycine ribonucleotide, did not serve as substrates, but were inhibitors of the enzyme, competitive against glycine ribonucleotide, with K<sub>i</sub> values ranging from 7.4 to 23.6 times the K<sub>m</sub> for glycine ribonucleotide. However, the O-phosphonate analog of carbocyclic glycine ribonucleotide did support enzymic activity, with V/K (relative intensity) of 0.8%. In addition, glycine ribonucleoside was neither a substrate for, nor an inhibitor of, glycine ribonucleotide transformylase. Furthermore, α-glycine ribonucleotide had no effect on enzyme activity. These studies have begun to define the structural features of the nucleotide substrate required to support enzymic activity.  
 IT 127061-46-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (substrate and inhibitor specificity of glycine ribonucleotide transformylase from chicken liver)  
 RN 127061-46-5 CAPLUS  
 CN 2-Cyclopentene-1-carboxylic acid, 4-(acetamino)-, methyl ester, (1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



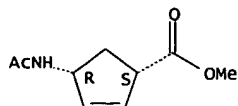
L43 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1995:579673 CAPLUS  
 DN 123:286496  
 TI Biocatalytical transformations. VI. The 4-acetamido-cyclopent-2-ene carboxylate route revisited: synthesis of (+)- and (-)- aristeromycin  
 AU Csuk, Rene; Doerr, Petra  
 CS Pharm.-Chem. Inst., Univ. Heidelberg, Heidelberg, D-69120, Germany  
 SO Tetrahedron (1995), 51(20), 5789-98  
 CODEN: TETRAB; ISSN: 0040-4020  
 PB Elsevier  
 DT Journal  
 LA English  
 AB Enantiomerically pure(+)- as well as (-)-aristeromycin can be synthesized starting from (+)- or (-)-Bu (or hexyl) 4-acetamido-cyclopent-2-ene carboxylate; these carboxylates are easily obtained from their corresponding racemates by hydrolysis with the lipase from *Candida rugosa*.  
 IT 155836-24-1P  
 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)  
 (enzymic hydrolysis of acetamidocyclopentene carboxylate in preparation of aristeromycin)  
 RN 155836-24-1 CAPLUS  
 CN 2-Cyclopentene-1-carboxylic acid, 4-(acetamino)-, butyl ester, (1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



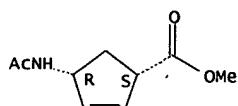
IT 127061-46-5P  
 RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)  
 (enzymic hydrolysis of acetamidocyclopentene carboxylate in preparation of aristeromycin)  
 RN 127061-46-5 CAPLUS  
 CN 2-cyclopentene-1-carboxylic acid, 4-(acetylamino)-, methyl ester, (1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



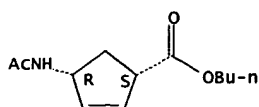
L43 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1995:36909 CAPLUS  
 DN 123:83906  
 TI The enantioselective synthesis of an important intermediate to the antiviral, (-)-carbovir  
 AU Handa, Sheetal; Earlam, George J.; Geary, Phillip J.; Hawes, John E.; Phillips, Gareth T.; Pryce, Robert J.; Ryback, George; Shears, Jeremy H.  
 CS Department of Chemistry, King's College London, London, WC2R 2LS, UK  
 SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1994), (14), 1885-6  
 CODEN: JCPRB4; ISSN: 0300-922X  
 DT Journal  
 LA English  
 OS CASREACT 123:83906  
 AB Two new routes to the important intermediate (-)-I (R = NHAc) for the carbocyclic-based nucleosides are reported. The intermediate (-)-I (R = NHAc) has also been synthesized in high enantiomeric excess via an enzymic resolution of the racemic amide (+)-I (R = NHAc) or an enzymic enantiotopic hydrolysis of the meso diester I (R = CO<sub>2</sub>Me).  
 IT 127061-46-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (enantioselective synthesis of amide cyclopentadiene as carbovir synthon)  
 RN 127061-46-5 CAPLUS  
 CN 2-cyclopentene-1-carboxylic acid, 4-(acetylamino)-, methyl ester, (1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L43 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1994:436093 CAPLUS  
 DN 121:36093  
 TI Biocatalytical transformations. IV. Enantioselective enzymic hydrolyses of building blocks for the synthesis of carbocyclic nucleosides  
 AU Csuk, Rene; Doerr, Petra  
 CS Pharm.-Chem. Inst., Univ. Heidelberg, Heidelberg, D-69120, Germany  
 SO Tetrahedron: Asymmetry (1994), 5(2), 269-76  
 CODEN: TASYE3; ISSN: 0957-4166  
 DT Journal  
 LA English  
 OS CASREACT 121:36093  
 AB Enantiomerically pure alkyl acetamidocyclopentenecarboxylates I (R = NHAc, R<sub>1</sub> = R<sub>2</sub> = H, R<sub>3</sub> = CO<sub>2</sub>Me; R = R<sub>3</sub> = H, R<sub>1</sub> = NHAc, R<sub>2</sub> = CO<sub>2</sub>Me) are obtained from their corresponding racemates by hydrolysis with PLE or the lipase from *Candida cylindracea*.  
 IT 155836-24-1P 155836-25-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and sequential hydrolysis and esterification of)  
 RN 155836-24-1 CAPLUS  
 CN 2-cyclopentene-1-carboxylic acid, 4-(acetylamino)-, butyl ester, (1S-cis)- (9CI) (CA INDEX NAME)

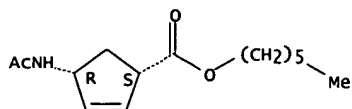
Absolute stereochemistry.



RN 155836-25-2 CAPLUS

CN 2-Cyclopentene-1-carboxylic acid, 4-(acetamino)-, hexyl ester, (1S-cis)-  
(9CI) (CA INDEX NAME)

Absolute stereochemistry.



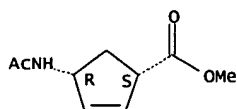
IT 127061-46-5P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as building block for the synthesis of carbocyclic nucleosides)

RN 127061-46-5 CAPLUS

CN 2-Cyclopentene-1-carboxylic acid, 4-(acetamino)-, methyl ester,  
(1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L43 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:236065 CAPLUS

DN 116:236065

TI Potential use of carbocyclic nucleosides for the treatment of AIDS:  
chemo-enzymic syntheses of the enantiomers of carbovir

AU Evans, Chris T.; Roberts, Stanley M.; Shoberu, Karoline A.; Sutherland,  
Alan G.

CS Enzymatix Ltd., Cambridge, SW4 4WE, UK

SO Journal of the Chemical Society, Perkin Transactions 1: Organic and  
Bio-Organic Chemistry (1972-1999) (1992), (5), 589-92

CODEN: JCPRB4; ISSN: 0300-922X

DT Journal

LA English

AB Lactam azabicycloheptenone I, derived by whole cell enantioselective  
hydrolysis of the racemate was converted into (-)-carbovir in 10 steps.  
Lipase-catalyzed acetylation of 4-cis-hydroxycyclopent-2-enylmethyl  
triphenylmethyl ether afforded the optically pure ester II (R = CPh3, R1  
= Ac) (III) and the alc. II (R = H, R1 = CPh3). III was converted into  
(+)-carbovir in 3 steps.

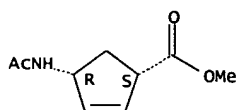
IT 127061-46-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and reduction of)

RN 127061-46-5 CAPLUS

CN 2-Cyclopentene-1-carboxylic acid, 4-(acetamino)-, methyl ester,  
(1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L43 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1990:217364 CAPLUS

DN 112:217364

TI Synthesis of the two enantiomers of the carbocyclic analog of nicotinamide  
ribose and analysis of their biological properties

AU Ikbal, Mohamed; Cerceau, Claude; Le Goffic, Francois; Sicsic, Sames

CS CERCOA, CNRS, Thiais, 94320, Fr.

SO European Journal of Medicinal Chemistry (1989), 24(4), 415-20

CODEN: EJMCA5; ISSN: 0223-5234

DT Journal

LA French

OS CASREACT 112:217364

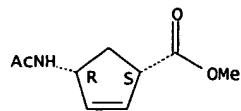
AB Enantiomers of the carbocyclic analog of nicotinamide ribose I were prepared  
via an enzymic resolution of the precursor ( $\pm$ )-II using pig liver  
esterase. (-)-I possessed good and highly specific bactericidal and  
fungicidal activities. In vivo competition expts. between (-)-I and  
intermediate mols. of the pyridine nucleotide cycle along with its  
inhibitory behavior against 2 key enzymes of the NAD<sup>+</sup> metabolism were  
performed and suggested that the target of (-)-I could be one of the  
enzymes involved in NAD<sup>+</sup> metabolism

IT 127061-46-5P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and hydroxylation by osmium tetroxide)

RN 127061-46-5 CAPLUS  
CN 2-Cyclopentene-1-carboxylic acid, 4-(acetylamino)-, methyl ester,  
(1S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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